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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/533,705      | 03/23/2000  | Matthew Douglas Penry | NSCI-G3900          | 1251             |

7590 09/24/2003

Michael J. Pollack  
Stallman & Pollack  
121 Spear Street, Suite 290  
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EXAMINER

DUONG, THOI V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|          | 2871         |

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                             |                          |                  |
|-----------------------------|--------------------------|------------------|
| <b>Offic Action Summary</b> | Application No.          | Applicant(s)     |
|                             | 09/533,705               | PENRY ET AL.     |
|                             | Examiner<br>Thoi V Duong | Art Unit<br>2871 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 14 July 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 16-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 16-18 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ . 6)  Other: \_\_\_\_ .

## DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 13, filed July 14, 2003.

Accordingly, claims 1-15 were cancelled, and new claims 16-18 were added.

Currently, claims 16-18 are pending in this application.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Janssen et al. (Pub. No. US 2001/0003474 A1) in view of Lu et al. (USPN 5,764,324).

As shown in Figs. 1 and 2, Janssen discloses a silicon-backed microdisplay comprising:

- a silicon substrate 10;
- a silicon-side conductive layer 12 formed of aluminum disposed on the silicon substrate (page 2, paragraph 26);
- a silicon-side passivation layer 24 disposed on the silicon-side conductive layer 12;
- a cover glass 22;
- a glass-side conductive layer 20 disposed on the cover glass 22;

a glass-side passivation layer 26 of a predetermined material and thickness disposed on the glass-side conductive layer 20; and

liquid crystal material 16 sandwiched between the glass-side passivation layer and the silicon-side passivation layer,

wherein the glass-side passivation layer comprises a material selected from SiO<sub>2</sub>, or Al<sub>2</sub>O<sub>3</sub>, or an oxide or nitrite of titanium or tantalum, or any other insulating material (page 2, paragraph 30); and

wherein the predetermined thickness of the glass-side passivation layer is 1000 angstroms or much thinner (page 2, paragraph 31).

Janssen et al also discloses that a thickness of the passivation layers larger than that needed to substantially reduce or eliminate electro-chemical interaction is acceptable (page 3, paragraph 32).

Janssen et al. discloses a silicon-backed microdisplay that is basically the same as that recited in claims 16-18 except for a silicon-side passivation layer having a thickness of 2000-6000 angstroms and comprising a silicon dioxide layer in combination with a silicon nitride layer,

As shown in Fig. 4, Lu et al. discloses a reflective liquid crystal cell comprising a silicon-side conductive layer 32 formed on a silicon substrate 1 (see Fig. 3A) and a silicon-side passivation layer 50 formed on the conductive layer 32. Lu et al. teach that the thickness of the silicon-side passivation layer is preferably between 200 angstroms to 3200 angstroms (col. 5, lines 31-33) so as to obtain no perceivable flickers with higher reflectivity and accuracy in displaying gray scale (col. 2, lines 49-63). Also, as

shown in Fig. 6, Lu et al. discloses a silicon-side passivation layer 54 and an ITO layer 56 formed on the conductive layer 32. Lu et al. teach that the silicon-side passivation layer 54 is preferably a silicon dioxide film and the ITO layer 56 may be replaced with an insulating transparent film such as SiN (col. 6, lines 16-37). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the silicon-backed microdisplay of Janssen et al. with the teaching of Lu et al. by forming a silicon-side passivation layer having a proper thickness and comprising a silicon dioxide layer in combination with a silicon nitride layer to obtain a flicker-free display.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

09/11/2003

  
ROBERT H. KIM  
SUPERVISOR PATENT EXAMINER  
TECHNOLOGY CENTER 2835